Patent Claims:

1 – 20 (canceled)

21. (new) A turbo engine, comprising:

a plurality of rotor blades made of an electrically conducting material having an electrically insulating surface and arranged on a rotor shaft that is rotatably mounted in a housing and electrically connected to a reference potential or a plurality of fixed guide vanes made of an electrically conducting material having an electrically insulating surface with the electrically conducting material of the guide vanes electrically connected to the reference potential; and

a measuring element for measuring an electric and/or magnetic field strength set up by a charge distribution on the surface of the rotor blades or guide vanes,

wherein the measuring element is arranged near the rotor blades and/or near the guide vanes.

22. (new) The turbine engine as claimed in claim 21, wherein at least one measuring element is arranged on the rotor shaft in the region of the guide vanes.

23. (new) The turbo engine as claimed in claim 22, wherein at least one measuring element is arranged in the region of the rotor blades and at least one measuring element is provided for measuring an electric and/or magnetic field strength set up by a charge distribution on the surface of the rotor blades.

24. (new) The turbo engine as claimed in claim 23, wherein at least one measuring element is formed by a coaxial antenna.

25. (new) The turbo engine as claimed in claim 23, wherein at least one measuring element is connected to a measuring unit.

26. (new) The turbo engine as claimed in claim 25, wherein the measuring unit contains a monitoring unit.

27. (new) The turbo engine as claimed in claim 25, wherein the measuring unit has a communication link to a control center.

28. (new) The turbo engine as claimed in claim 26, wherein the monitoring unit comprises a signaling and/or an alarm device.

29. (new) The turbo engine as claimed claim 26, wherein the turbo engine is shut down by the monitoring unit.

30. (new) The turbo engine as claimed in claim 23, wherein the electrically insulating surface is formed by a coating.

31. (new) The turbo engine as claimed in claim 23, wherein the turbo engine is a gas turbine.

32. (new) A method for determining damage to an electrically insulating surface of a turbine component, comprising:

providing a plurality of turbine blades or vanes made of an electrically conducting material and arranged within a turbo engine;

creating an electric and/or magnetic field strength by a charge distribution on the surface of the turbine blade or vane;

measuring the electric and/or magnetic field strength by a measuring element; and

determining a deviation from a definable threshold value.

33. (new) The method as claimed in claim 32, wherein the measuring element is arranged on a rotor shaft in the region of the vanes.

34. (new) The method as claimed in claim 32, wherein the deviation is transmitted to a control center.

35. (new) The method as claimed in claim 32, wherein an alarm is output when the definable threshold value is exceeded.

36. (new) The method as claimed in claim 32, wherein the turbo engine is shut down when the definable threshold value is exceeded.

37. (new) The method as claimed in claim 32, wherein a measurement signal supplied by the at least one measuring element is transformed by a Fourier transformation, by a measuring unit.

38. (new) The method as claimed in claim 37, wherein a FFT transformation unit is used.

39. (new) The method as claimed in claim 38, wherein a result of the transformation is displayed and/or signaled.

40. (new) The method as claimed in claim 39, wherein the result of the transformation is compared with the definable threshold value.